

WHAT IS CLAIMED IS:

1. A keypad device to be applied in an electrical device, wherein the keypad device comprises:

a keypad module including at least one key, wherein when at least one key is pressed, the keypad module will output an interrupt signal, receive a drive voltage, and, according to the drive voltage, output a parallel signal corresponding to the key;

a parallel/serial conversion device coupled to the keypad module for receiving the parallel signal and outputting a serial signal according to the parallel signal; and

a controller, being coupled to the keypad module and the parallel/serial conversion device respectively, wherein the controller receives the interrupt signal and outputs the drive voltage according to the interrupt signal, and the controller receives the serial signal and determines the status of the keypad module according to the serial signal received.

2. The keypad device according to claim 1, wherein the controller comprises an input/output pin which is coupled to the keypad module.
3. The keypad device according to claim 1, wherein the electrical device is a PDA (Personal Digital Assistant).

4. The keypad device according to claim 1, wherein the steps for keypad device to read a keypad signal comprises:

outputting an interrupt signal from the keypad module to the controller when the key is pressed;

5 outputting the drive voltage from the controller to the keypad module according to the interrupt signal;

outputting a parallel signal corresponding to the key according to the drive voltage from the keypad module;

converting the parallel signal into a serial signal; and

10 determining the status of the keypad module according to the serial signal by the controller.

5. A keying input circuit, comprising:

a keypad module including at least one key, wherein when the key is pressed, the keypad module will output an interrupt signal and output a
15 module status data, which includes a plurality of key status data and corresponds to the pressed key;

a control circuit, electrically connected to the keypad module and outputs a drive voltage and a clock signal according to the interrupt signal;

a conversion circuit, being electrically connected to the keypad module and the control circuit respectively and being used for the receiving of the drive voltage and the clock signal, wherein the conversion circuit receives the key status data in parallel according to the drive voltage and serially outputs
5 the key status data according to the timing of the clock signal; and

a recognition circuit, being electrically connected to the conversion circuit, wherein the recognition circuit serially receives the key status data and recognizes the pressed keys according to the key status data.

6. The keying input circuit according to claim 5, wherein the control circuit
10 and the recognition circuit are installed in a micro-controller.

7. The keying input circuit according to claim 5, wherein the interrupt signal is at a low-level voltage.

8. The keying input circuit according to claim 5, wherein the drive voltage is at a high-level voltage.

9. The keying input circuit according to claim 5, wherein the module
15 status data includes 8 key status data.

10. A keypad detecting method used in a keypad input circuit, wherein the keypad input circuit includes at least a keypad module which includes at least one key, a conversion circuit and a microcontroller, the method comprising:

outputting a module status data from the keypad module when the key is pressed, wherein the module status data corresponds to the pressed key while the module status data includes a plurality of key status data;

5 parallelly outputting the key status data to the conversion circuit and
serially outputting the key status data from the conversion circuit; and

serially outputting the key status data to the micro-controller and recognizing the pressed key according to the key status data by the micro-controller.

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